

# JAPAN

## EDICT OF GOVERNMENT

In order to promote public education and public safety, equal justice for all, a better informed citizenry, the rule of law, world trade and world peace, this legal document is hereby made available on a noncommercial basis, as it is the right of all humans to know and speak the laws that govern them.

JIS C 9335-2-3 (2004) (English): Household and similar electrical appliances -- Safety -- Part 2-3: Particular requirements for electric irons

安

*The citizens of a nation must  
honor the laws of the land.*

Fukuzawa Yukichi

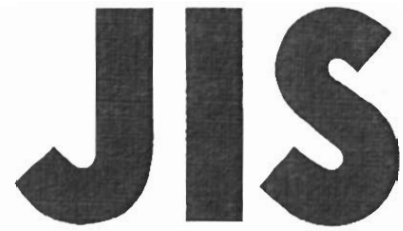
併

BLANK PAGE



BLANK PAGE





JAPANESE  
INDUSTRIAL  
STANDARD

Translated and Published by  
Japanese Standards Association

---

# JIS C 9335-2-3 : 2004

(JEMA)

Household and similar electrical  
appliances—Safety—  
Part 2-3 : Particular requirements  
for electric irons

---

ICS 13.120; 97.060

Reference number : JIS C 9335-2-3 : 2004 (E)

PROTECTED BY COPYRIGHT

14 S

## Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee, as the result of proposal for revision of Japanese Industrial Standard submitted by Japan Electrical Manufacturer's Association (JEMA) with the draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law applicable to the case of revision by the provision of Article 14. Consequently **JIS C 9335-2-3 : 1999** is replaced with this Standard.

This revision has been made based on **IEC 60335-2-3 : 2002** *Household and similar electrical appliances—Safety—Part 2-3 : Particular requirements for electric irons* for the purposes of making it easier to compare this Standard with International Standard; to prepare Japanese Industrial Standard conforming with International Standard; and to propose a draft of an International Standard which is based on Japanese Industrial Standard. Attention is drawn to the possibility that some parts of this Standard may conflict with a patent right, application for a patent after opening to the public, utility model right or application for registration of utility model after opening to the public which have technical properties. The relevant Minister and the Japanese Industrial Standards Committee are not responsible for identifying the patent right, application for a patent after opening to the public, utility model right or application for registration of utility model after opening to the public which have the said technical properties.

Date of Establishment: 1999-03-20

Date of Revision: 2004-02-20

Date of Public Notice in Official Gazette: 2004-02-20

Investigated by: Japanese Industrial Standards Committee  
Standards Board  
Technical Committee on Electricity  
Technology

---

JIS C 9335-2-3:2004, First English edition published in 2004-10

Translated and published by: Japanese Standards Association  
4-1-24, Akasaka, Minato-ku, Tokyo, 107-8440 JAPAN

---

In the event of any doubts arising as to the contents,  
the original JIS is to be the final authority.

© JSA 2004

All rights reserved. No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

Printed in Japan

## Contents

	Page
Introduction .....	1
1 Scope .....	1
2 Normative references .....	2
3 Definitions .....	2
4 General requirement .....	3
5 General conditions for the test .....	3
6 Classification .....	3
7 Marking and instructions .....	3
8 Protection against access to live parts .....	4
9 Starting of motor-operated appliances .....	4
10 Power input and current .....	4
11 Heating .....	4
12 Void .....	5
13 Leakage current and electric strength at operating temperature.....	6
14 Transient overvoltages .....	6
15 Moisture resistance .....	6
16 Leakage current and electric strength .....	6
17 Overload protection of transformers and associated circuits .....	6
18 Endurance .....	6
19 Abnormal operation .....	6
20 Stability and mechanical hazards .....	7
21 Mechanical strength.....	7
22 Construction .....	8
23 Internal wiring.....	9
24 Components .....	9
25 Supply connection and external flexible cords .....	10
26 Terminals for external conductors .....	11

27	Provision for earthing .....	11
28	Screws and connections .....	11
29	Clearances, creepage distances and solid insulation .....	11
30	Resistance to heat and fire .....	11
31	Resistance to rusting .....	11
32	Radiation, toxicity and similar hazards .....	11
Annexes .....		12
Annex 1 (informative)	Comparison table between JIS and corresponding International Standard .....	13

## Household and similar electrical appliances—Safety—Part 2-3 : Particular requirements for electric irons

**Introduction** This Japanese Industrial Standard has been prepared based on IEC 60335-2-3 *Household and similar electrical appliances—Safety—Part 2-3 : Particular requirements for electric irons* published in 2002 as the fifth edition with some modifications in the technical contents. This is to be read in conjunction with JIS C 9335-1 : 2003 *Household and similar electrical appliances—Safety—Part 1 : General requirements*.

In this Standard, the portions underlined with dots are the matters modified from the original International Standard. The list of modifications is given in annex 1 (informative) with the explanation being attached.

**1 Scope** This Standard deals with the safety of electric dry irons and steam irons, including those with a separate water reservoir or boiler having a capacity not exceeding 5 L, for household and similar purposes, their rated voltage being not more than 250 V.

Appliances not intended for normal household use, but which nevertheless may be a source of danger to the public, such as appliances intended to be used by laymen in shops, in light industry and on farms, are within the scope of this Standard.

As far as is practicable, this Standard deals with the common hazards presented by appliances which are encountered by all persons in and around the home. However, in general, it does not take into account

- the use of appliances by young children or infirm persons without supervision;
- playing with the appliance by young children.

**NOTE 101** Attention is drawn to the fact that

- for appliances intended to be used in vehicles or on board ships or aircraft, additional requirements may be necessary;
- in many countries additional requirements are specified by the national health authorities, the national authorities responsible for the protection of labour and similar authorities;

**NOTE 102** This Standard does not apply to

- rotary and flat bottom irons (**JIS C 9335-2-44**);
- appliances designed exclusively for industrial purposes;
- appliances intended to be used in locations where special conditions prevail, such as the presence of a corrosive or explosive atmosphere (dust, vapour or gas).

**NOTE :** The International Standard corresponding to this Standard is as follows.

In addition, symbols which denote the degree of correspondence in the contents between the relevant International Standard and JIS are IDT (identical), MOD (modified), and NEQ (not equivalent) according to ISO/IEC Guide 21.



IEC 60335-2-3 : 2002 *Household and similar electrical appliances—  
Safety—Part 2-3 : Particular requirements for elec-  
tric irons (MOD)*

**2 Normative references** The normative references shall be as specified in clause 2 of JIS C 9335-1.

**3 Definitions** For the purpose of this Standard, in addition to the definitions specified in clause 3 of JIS C 9335-1, the definitions stated below shall apply. However, 3.1.9 shall be as stated in this Standard.

**3.1.9 Replacement of 3.1.9 of JIS C 9335-1:**

**normal operation** operation of the appliance under the following conditions.

- a) The iron is placed on its stand and is operated with its thermostat at the highest setting.
- b) If the iron does not have a thermostat, the surface temperature at the mid-point of the centre line of the soleplate is maintained at  $250\text{ }^{\circ}\text{C} \pm 10\text{ }^{\circ}\text{C}$  by switching the supply on and off, or at the highest temperature if it is lower.
- c) Steam irons with a separate water reservoir or boiler are operated with the water reservoir or boiler filled with water.
- d) Pressurized steam irons incorporating the boiler are operated with or without water, whichever is more unfavourable.
- e) Other steam irons are operated empty.

**3.101 steam iron** iron having means to produce and supply steam to the textile material during ironing

NOTE : Steam irons may incorporate a means for blowing steam onto clothes.

**3.102 vented steam iron** steam iron in which steam is produced when the water contacts the soleplate, the water reservoir being at atmospheric pressure

NOTE : The water reservoir may be incorporated in the iron or is connected to the iron by a hose.

**3.103 pressurized steam iron** steam iron in which steam is produced in a boiler at a pressure exceeding 50 kPa

NOTE : The boiler may be incorporated in the iron or is connected to the iron by a hose.

**3.104 instantaneous steam iron** steam iron in which small quantities of water are pumped from the water reservoir and in which steam is produced when the water contacts the walls of the boiler, the water reservoir and the boiler being at atmospheric pressure

NOTE : The water reservoir and the boiler are connected to the iron by a hose.

**3.105 cordless iron** iron that is connected to the supply only when placed on its stand

NOTE : Cordless irons may be directly connected to the supply mains during ironing by a detachable part to which the supply cord is fixed.

**3.106 soleplate** heated part of the iron which is pressed against the textile material while ironing

**3.107 stand** heel of the iron or a separate part provided with the iron, on which the iron is placed when at rest

NOTE : The separate water reservoir or boiler may serve as the stand.

**4 General requirement** General requirement shall as stated in clause 4 of **JIS C 9335-1**.

**5 General conditions for the test** General conditions of the tests shall be as stated in clause 5 of **JIS C 9335-1**, except as follows:

**5.2 Addition to 5.2 of JIS C 9335-1:**

NOTE 101 If a protective device becomes open circuit during the tests of **21.101**, the test is continued on a separate appliance.

NOTE 102 The additional test of **25.14** is carried out on a separate appliance.

**5.3 Addition to 5.3 of JIS C 9335-1:**

For irons with a thermostat, the test of **21.101** is carried out before the test of clause 11. The test of **22.102** is carried out during the test of clause 11.

**5.101** Irons are tested as heating appliances even if they incorporate a motor.

**5.102** If a cordless iron can also be directly connected to the supply mains during ironing, the relevant tests are applicable for both modes of operation.

**6 Classification** The classification shall be as stated in clause 6 of **JIS C 9335-1**.

**7 Marking and instructions** The marking and instructions shall be as stated in clause 7 of **JIS C 9335-1**, except as follows.

**7.1 Modification of 7.1 of JIS C 9335-1:**

The third paragraph shall be replaced.

— rated power input (W or kW)

Addition:

Separate stands shall be marked with

— name, trademark or identification mark of the manufacturer or responsible vendor;

— model or type reference of the stand.

Stands of cordless irons shall be marked with their

- rated voltage or rated voltage range (V);
- rated power input or rated power input range (W or kW).

**7.12 Addition to 7.12 of JIS C 9335-1:**

The instructions shall contain the substance of the following:

- the iron must not be left unattended while it is connected to the supply mains;
- the plug must be removed from the socket-outlet before the water reservoir is filled with water (for steam irons and iron incorporating means for spraying water);
- the filling aperture must not be opened during use. Instructions for the safe refilling of the water reservoir shall be given (for pressurized steam irons);
- the iron must only be used with the stand provided (for cordless irons);
- the iron is not intended for regular use (for travel irons).

**7.15 Addition to 7.15 of JIS C 9335-1:**

For steam irons with a separate water reservoir or boiler, the total rated power input shall be marked on the part containing the supply terminals or supply cord.

**8 Protection against access to live parts** Protection against access to live parts shall be as stated in clause 8 of JIS C 9335-1, except as follows.

**8.1.2 Addition to 8.1.2 of JIS C 9335-1:**

NOTE 101 Connecting devices in stands of cordless irons are not considered to be socket-outlets.

**9 Starting of motor-operated appliances** Clause 9 of JIS C 9335-1 is not applicable.

**10 Power input and current** The power input and current shall be as stated in clause 10 of JIS C 9335-1.

**11 Heating** The heating shall be as specified in clause 11 of JIS C 9335-1 except as follows.

**11.2 Replacement of 11.2 of JIS C 9335-1:**

- a) Irons are placed on their stands on the floor of a test corner and away from the walls. However, the separate water reservoir or boiler of steam irons is placed as near to the walls as possible. Dull black painted plywood approximately 20 mm thick is used for the test corner. Vented steam irons with a separate water reservoir, pressurized steam irons and instantaneous steam irons are tested with the water reservoir empty and filled but without steam emission.
- b) Irons, other than cordless irons, are also tested with the soleplate in the horizontal position placed on three pointed metallic supports that have a height of at least 100 mm. Vented steam irons with a separate water reservoir, pressurized steam

irons and instantaneous steam irons are operated with the water reservoir or boiler filled.

- c) For appliances provided with an automatic cord reel, one-third of the total length of the cord is unreeled. The temperature rise of the cord sheath is determined as near as possible to the hub of the reel and also between the two outermost layers of the cord on the reel. However, if the cord reel is incorporated in a part that is moved during ironing, the cord is completely unreeled.
- d) For cord storage devices, other than automatic cord reels, that are intended to partially accommodate the supply cord while the appliance is in operation, 50 cm of the cord is unwound. However, for cord storage devices on parts that are moved during ironing, the cord is completely unwound. The temperature rise of the stored part of the cord is determined at the most unfavourable place.

**11.4 Addition to 11.4 of JIS C 9335-1:**

If the temperature rise limits are exceeded in appliances incorporating motors, transformers or electronic circuits and the power input is lower than the rated power input, the test is repeated with the appliance supplied at 1.06 times rated voltage.

**11.6 Subclause 11.6 of JIS C 9335-1 is not applicable.**

**11.7 Replacement of 11.7 of JIS C 9335-1:**

Irons are operated until steady conditions are established.

When vented steam irons with a separate water reservoir, pressurized steam irons and instantaneous steam irons are tested with the iron placed on the pointed supports, steam is emitted in cycles, each cycle having a period of 10 s with steam emission and a period of 10 s with the steam emission interrupted.

**11.8 Modification of 11.8 of JIS C 9335-1:**

Addition:

- a) During the test with the iron placed on the pointed supports, only the temperature rises of the insulation of internal wiring and flexible cords are measured. However, the temperature rise limits apply to the water reservoir and the hose of pressurized steam irons and instantaneous steam irons. The temperature rise of the accessible surface of the hose shall comply with the temperature rise limits for handles that are held for short periods only in normal use. However, if a non-metallic hose is covered by textile material, the temperature rise of the surface of the textile material shall not exceed 80 K.
- b) The temperature rise limits of motors, transformers and components of electronic circuits, including parts directly influenced by them, may be exceeded when the appliance is operated at 1.15 times rated power input.

For temperature rise limits of rubber or PVC insulation of internal wiring or external wiring including power supply cord without T mark, the values specified in table 3 plus 10 K are applicable.

**12 Void**

**13 Leakage current and electric strength at operating temperature** Leakage current and electric strength at operating temperature shall be as specified in clause 13 of JIS C 9335-1.

**14 Transient overvoltages** Transient overvoltage shall be as specified in clause 14 of JIS C 9335-1.

**15 Moisture resistance** Moisture resistance shall be as specified in clause 15 of JIS C 9335-1, except as follows.

**15.2 Modification of 15.2 of JIS C 9335-1:**

The test for steam irons, other than those with a separate water reservoir or boiler, is carried out as follows.

- a) The iron is placed in the filling position according to the instructions and filled with water containing approximately 1 % NaCl. A further quantity of 0.1 L is steadily poured into the filling opening over a period of 1 min. The iron is then placed on its stand and subjected to the electric strength test of 16.3. The iron is left on its stand for 10 min after which the electric strength test is repeated.
- b) The iron, while still filled, is operated at rated power input for 1 min under normal operation. It shall then withstand the electric strength test of 16.3.
- c) Cordless irons are also filled with the saline solution while resting on their stands, if the iron can easily be filled in this position.

**16 Leakage current and electric strength** Leakage current and electric strength shall be as specified in clause 16 of JIS C 9335-1.

**17 Overload protection of transformers and associated circuits** Overload protection of transformers and associated circuits shall be as specified in clause 17 of JIS C 9335-1.

**18 Endurance** Clause 18 of JIS C 9335-1 is not applicable.

**19 Abnormal operation** The abnormal operation shall be as specified in clause 19 of JIS C 9335-1 except as follows.

**19.1 Modification:**

The tests of 19.2 and 19.3 are not carried out.

Addition:

Cordless irons are also subjected to the tests of 19.101.

**19.4 Modification:**

The test is carried out at rated power input.

Addition:

Steam irons are tested with or without water, whichever is more unfavourable.

The test is only carried out with the iron resting on its stand.

Any control that limits the pressure during the test of clause 11 is rendered inoperative.

**19.7 Addition to 19.7 of JIS C 9335-1:**

The test is carried out for 5 min unless the motor is kept switched on by hand.

**19.101** Cordless irons are operated under normal operation at rated power input until the thermostat operates for the first time. The iron is then placed on its stand in the position that most adversely affects the material of the stand.

**20 Stability and mechanical hazards** Stability and mechanical hazards shall be as specified in clause 20 of JIS C 9335-1 except as follows.

**20.1 Replacement of 20.1 of JIS C 9335-1.**

Irons shall have adequate stability.

Compliance is checked by the following test.

Irons incorporating a sand are placed on their stand on a plane inclined at an angle of 10° to the horizontal, the cord resting on the inclined plane in the most unfavourable position. Irons supplied with a separate stand are placed on the stand on a plane inclined at an angle of 15° to the horizontal.

Appliances intended to be filled with liquid by the user in normal use are tested empty or filled with the most unfavourable quantity of water up to the capacity indicated in the instructions.

NOTE 101 The stand may be tapped to overcome static friction between the iron and the stand.

NOTE 102 The appliance is not connected to the supply mains.

If the iron overturns or slips off the stand in one or more positions, it is tested as specified in clause 11 in all these positions.

The temperature rise shall not exceed the values specified in table 9.

**21 Mechanical strength** Mechanical strength shall be as specified in clause 21 of JIS C 9335-1 except as follows.

Addition:

Compliance is also checked by the test of 21.101.

**21.101** The iron is operated under normal operation at rated power input and, the soleplate temperature is maintained under these conditions throughout the test.

The iron is then suspended by its handle with the soleplate in the horizontal position. It is dropped from a height of 40 mm onto a rigidly supported steel plate having a thickness of at least 15 mm and a mass of at least 15 kg. The test is carried out 1 000 times at a rate not exceeding 20 drops per min.

The test is conducted so that the iron rests on the steel plate for approximately 15 % of the time.

NOTE : The iron is suspended so that the impact energy is only influenced by its mass.

After the test, the iron shall not be damaged to such an extent that compliance with 8.1, 15.2 and clause 29, is impaired. In case of doubt, supplementary insulation and reinforced insulation is subjected to the electric strength test of 16.3.

**22 Construction** The construction shall be as specified in clause 22 of JIS C 9335-1 except as follows.

**22.7 Replacement of 22.7 of JIS C 9335-1.**

Pressurized steam irons and instantaneous steam irons shall incorporate adequate safeguards against the risk of excessive pressure.

If jets of steam or hot water are emitted through protective devices, the electrical insulation shall not be affected or the user exposed to a hazard.

Compliance is checked by inspection and by the following test.

For pressurized steam irons, the maximum pressure occurring during the test of clause 11 with the boiler filled but without steam emission, is measured. All pressure-regulating devices that operated during the test are rendered inoperative and the pressure measured again. The pressure shall not increase by more than 200 kPa. Any pressure-limiting protective device is then rendered inoperative and the pressure in the boiler is raised hydraulically to five times the pressure measured originally or twice the pressure measured with the pressure-regulating device rendered inoperative, whichever is higher. There shall be no leakage from the water reservoir.

Pressurized steam irons in which the device regulating the steam supply is within the boiler are operated as specified in clause 11 but with all pressure-regulating devices operating during the test of clause 11 rendered inoperative. All vents in the soleplate are sealed and the device regulating the steam supply is opened. There shall be no leakage from the hose except at an intentionally weak place within the enclosure of the boiler. If this occurs, the test is repeated on another appliance that shall also leak in the same way.

All vents in the soleplate of instantaneous steam irons are sealed and the pressure in the water reservoir is raised hydraulically until the pressure-limiting protective device operates. The pressure shall not exceed 50 kPa. The outlet through the protective device is then sealed and the pressure is raised to 100 kPa and maintained at this value for 1 min. There shall be no leakage from the water reservoir.

**22.101** Irons shall be provided with a stand.

Compliance is checked by inspection.

**22.102** Steam irons shall be constructed so that there is no spillage of water or sudden jets of steam or hot water likely to expose the user to a hazard when the iron is used in accordance with the instructions.

When removing the filling cap of boilers, the pressure shall be relieved in a controlled manner before the cap is removed completely, to avoid the emission of jets of steam or hot water in a manner likely to expose the user to a hazard.

Compliance is checked by inspection during the test of clause 11 and by removing the filling cap at the end of the test.

**22.103** The water reservoir of steam irons with a separate boiler shall incorporate at least one non-self-resetting thermal cut-out that is only accessible by means of a tool.

Compliance is checked by inspection.

**22.104** Pressure-limiting protective devices that operate during the tests of 19.4 and 22.7 shall have an inlet aperture at least 5 mm in diameter or 20 mm<sup>2</sup> in area and a width of at least 3 mm. The area of the aperture at the outlet shall not be less than that of the aperture at the inlet.

Compliance is checked by measurement.

**22.105** The connection contacts of cordless irons shall be constructed so that any electrical or mechanical failure occurring in normal use will not give rise to a hazard.

Compliance is checked by the following test.

The two live pins of the iron are connected together and an external resistive load is connected in series with the supply. The external load is such that the current is 1.1 times rated current when the iron is supplied at rated voltage.

The iron is placed on its stand and withdrawn 50 000 times, at a rate of 10 times per minute. The test is continued for a further 50 000 times without current flowing.

After the test the iron shall be fit for further use and compliance with 8.1, 16.3, 27.5 and clause 29, shall not be impaired.

**22.106** Cordless irons which may be directly connected to the supply mains during ironing shall be constructed so that the force necessary to withdraw the connector from the iron is at least 30 N.

Compliance is checked by measurement.

NOTE: Any locking device is engaged before carrying out the test.

**23 Internal wiring** The internal wiring shall be as specified in clause 23 of JIS C 9335-1.

**24 Components** The components shall be as specified in clause 24 of JIS C 9335-1 except as follows.

**24.1.3** Addition to 24.1.3 of JIS C 9335-1:

Switches that control steam or water emission are subjected to 50 000 cycles of operation.

**24.4** Addition to 24.4 of JIS C 9335-1:

NOTE 101 This requirement is not applicable to the connection between the iron and the stand of cordless irons.



**24.101** Any component incorporated in an iron for compliance with **19.4** shall not be self-resetting and only accessible by means of a tool.

Compliance is checked by inspection.

**25 Supply connection and external flexible cords** The supply connection and external flexible cords shall be as specified in clause **25** of **JIS C 9335-1** except as follows.

**25.5** Addition to **25.5** of **JIS C 9335-1**:

Type Z attachment is allowed for travel irons and cordless irons.

**NOTE 101** Type Z attachment is not allowed for cordless irons that may also be directly connected to the supply mains during ironing.

**25.7** Addition to **25.7** of **JIS C 9335-1**:

Braided cords may be used.

Polyvinyl chloride sheathed cords, polyvinyl cabtyre cords and polyvinyl cabtyre cables shall not be used.

**25.14** Modification of **25.14** of **JIS C 9335-1**:

Instead of the load specified for the cord, the cord is loaded with a mass of 2 kg, for the appliance exceeding 2 kg in mass.

Instead of the number of flexings specified, the number of flexings is 20 000.

**NOTE 101** The test is not carried out on cordless irons unless the iron can also be directly connected to the supply mains during ironing.

Addition:

For steam irons with a separate water reservoir or boiler, the test is made on the steam hose and the interconnection cord together. If they are contained in one sheath or otherwise attached to each other, the assembly is not turned through an angle of 90°.

The test shall not result in

- loosening of the hose;
- damage to the hose to such an extent that compliance with this Standard is impaired;
- leakage from the hose.

Appliances are also subjected to the following test while mounted on an apparatus similar to that of figure 8. This test is carried out on a separate appliance.

The supply cord is suspended vertically from the appliance and loaded so that a force of 10 N is applied. The oscillating member is moved through an angle of 180° and back to the initial position. The number of flexings is 2 000, the rate to flexing being six per minute.

**NOTE 102** The appliance is mounted so that the direction of flexing corresponds to that most likely to occur when the supply cord is wound around it for storage.

**NOTE 103** The test is not carried out if it is unlikely that the cord will be wrapped around the appliance, for example cordless irons and irons with a separate water reservoir.

**26 Terminals for external conductors** The terminals for external conductors shall be as specified in clause **26** of **JIS C 9335-1**.

**27 Provision for earthing** The provision for earthing shall be as specified in clause **27** of **JIS C 9335-1**.

**28 Screws and connections** The screws and connections shall be as specified in clause **28** of **JIS C 9335-1**.

**29 Clearances, creepage distances and solid insulation** The clearances, creepage distances and solid insulation shall be as specified in clause **29** of **JIS C 9335-1**.

**30 Resistance to heat and fire** The resistance to heat and fire shall be as specified in clause **30** of **JIS C 9335-1** except as follows.

**30.1** Addition to **30.1** of **JIS C 9335-1**:

For irons with thermostats, the temperature rises occurring during clause **19** are not taken into consideration.

**30.2.3** Subclause **30.2.3** of **JIS C 9335-1** is not applicable.

**31 Resistance to rusting** The resistance to rusting shall be as specified in clause **31** of **JIS C 9335-1**.

**32 Radiation, toxicity and similar hazards** The radiation, toxicity and similar hazards shall be as specified in clause **32** of **JIS C 9335-1**.

## **Annexes**

Annexes of **JIS C 9335-1** are applicable.

# Annex 1 (informative)

## Comparison table between JIS and corresponding International Standard

JIS C 9335-2-3 : 2004 Household and similar electrical appliances—Safety— Part 2-3 : Particular requirements for electric irons				IEC 60335-2-3 : 2002 Household and similar electrical appliances— Safety—Part 2-3 : Particular requirements for electric irons			
(I) Requirements in JIS		(II) Inter- national Standard number	(III) Requirements in International Standard		(IV) Classification and details of technical deviation between JIS and the International Standard by clause Location of deviation: text Indication method: dotted underlines		(V) Justification for the technical deviation and future measures
Clause	Content		Clause	Content	Classifi- cation by clause	Detail of technical deviation	
1 Scope	Safety of electric dry irons and steam irons for household and similar purposes with a rated voltage not more than 250 V	IEC 60335-2-3	1	Identical with JIS.	IDT	—	
2 Normative references	As specified in JIS C 9335-1.	IEC 60335-2-3	2	Identical with JIS.	IDT	—	
3 Definitions	Definitions of normal operation, steam iron, cordless iron, etc.	IEC 60335-2-3	3	Identical with JIS.	IDT	—	
4 General requirement	Rules for safety	IEC 60335-2-3	4	Identical with JIS.	IDT	—	
5 General con- ditions for the tests	Sample size, test se- quence, test conditions for cordless irons, etc.	IEC 60335-2-3	5	Identical with JIS.	IDT	—	
6 Classifica- tion	As specified in JIS C 9335-1.	IEC 60335-2-3	6	Identical with JIS.	IDT	—	

(I) Requirements in JIS		(II) International Standard number	(III) Requirements in International Standard		(IV) Classification and details of technical deviation between JIS and the International Standard by clause Location of deviation: text Indication method: dotted underlines		(V) Justification for the technical deviation and future measures
Clause	Content		Clause	Content	Classification by clause	Detail of technical deviation	
7 Marking and instructions	Marking on nameplate, contents of description on instruction manual	IEC 60335-2-3	7	Identical with JIS.	IDT	—	
8 Protection against access to live parts	Checking by test finger and test pin and treatment of connecting devices for cordless irons	IEC 60335-2-3	8	Identical with JIS.	IDT	—	
9 Starting of motor-operated appliances	Not applicable.	IEC 60335-2-3	9	Identical with JIS.	IDT	—	
10 Power input and current	As specified in JIS C 9335-1.	IEC 60335-2-3	10	Identical with JIS.	IDT	—	
11 Heating	The set-up conditions, test duration, test voltage, points of temperature measurements, etc. are specified. For internal wirings, relaxation of 10 K is allowed.	IEC 60335-2-3	11	Identical with JIS. However, relaxation of 10 K is allowed for internal wirings with the upper temperature limit of 50 K only.	MOD/ addition	JIS relaxes the permissible temperature by 10 K for all wires, by taken such a case in consideration that wires other than PVC wires complying with IEC are used for internal wiring.	IEC says that the set-up condition is horizontal, but this is different from the actual service conditions (i.e. repetition of horizontal and vertical). It is assumed that only horizontal set-up is adopted for efficiency of the tests, and the upper temperature limits are relaxed since such set-up is severe. In IEC only PVC wires are taken into account. In JIS specification is modified so that wires other than PVC wires are applicable (as given in Notes of JIS C 9335-1).

(I) Requirements in <b>JIS</b>		(II) International Standard number	(III) Requirements in International Standard		(IV) Classification and details of technical deviation between <b>JIS</b> and the International Standard by clause Location of deviation: text Indication method: dotted underlines		(V) Justification for the technical deviation and future measures
Clause	Content		Clause	Content	Classification by clause	Detail of technical deviation	
12 Void	Void	<b>IEC 60335-2-3</b>	12	Identical with <b>JIS</b> .	IDT	—	
13 Leakage current and electric strength at operating temperature	Tests for leakage current and electric strength under running conditions	<b>IEC 60335-2-3</b>	13	Identical with <b>JIS</b> .	IDT	—	
14 Transient overvoltages	Alternative test by means of impulse test for the part where the specified value of clearance is not satisfied	<b>IEC 60335-2-3</b>	14	Identical with <b>JIS</b> .	IDT	—	
15 Moisture resistance	Overflow test and moisture test of steam irons	<b>IEC 60335-2-3</b>	15	Identical with <b>JIS</b> .	IDT	—	
16 Leakage current and electric strength	Evaluation of insulation after moisture test	<b>IEC 60335-2-3</b>	16	Identical with <b>JIS</b> .	IDT	—	
17 Overload protection of transformers and associated circuits	Temperature test of transformer under simulated overload or short circuit	<b>IEC 60335-2-3</b>	17	Identical with <b>JIS</b> .	IDT	—	

(I) Requirements in <b>JIS</b>		(II) International Standard number	(III) Requirements in International Standard		(IV) Classification and details of technical deviation between <b>JIS</b> and the International Standard by clause Location of deviation: text Indication method: dotted underlines		(V) Justification for the technical deviation and future measures
Clause	Content		Clause	Content	Classification by clause	Detail of technical deviation	
18 Endurance	Not applicable.	<b>IEC 60335-2-3</b>	18	Identical with <b>JIS</b> .	IDT	—	
19 Abnormal operation	Abnormal state of cordless irons and steam irons	<b>IEC 60335-2-3</b>	19	Identical with <b>JIS</b> .	IDT	—	
20 Stability and mechanical hazards	Stability when iron is placed on the stand	<b>IEC 60335-2-3</b>	20	Identical with <b>JIS</b> .	IDT	—	
21 Mechanical strength	Drop test of irons. This is also applied to cordless irons.	<b>IEC 60335-2-3</b>	21	Drop test is not carried out for cordless irons.	MOD/alteration	<b>IEC</b> does not require drop test of cordless irons, but <b>JIS</b> decided to require drop test of cordless iron while the current is flowing as well as other irons.	From the view point of practical service, it is considered that cordless irons also require measures against fall with the current being passed, like other irons, for safety. Therefore such specification is added. Proposal to <b>IEC</b> is under consideration.
22 Construction	Construction in general, over pressure test of pressurized irons, spillage proof test of steam irons, closing and opening test of cordless irons, etc.	<b>IEC 60335-2-3</b>	22	Identical with <b>JIS</b> .	IDT	—	

(I) Requirements in <b>JIS</b>		(II) International Standard number	(III) Requirements in International Standard		(IV) Classification and details of technical deviation between <b>JIS</b> and the International Standard by clause Location of deviation: text Indication method: dotted underlines		(V) Justification for the technical deviation and future measures
Clause	Content		Clause	Content	Classification by clause	Detail of technical deviation	
23 Internal wiring	As specified in <b>JIS C 9335-1</b> .	<b>IEC 60335-2-3</b>	23	Identical with <b>JIS</b> .	IDT	—	
24 Components	Switches that control steam emission are subjected to 50 000 cycles of operation. Over-temperature preventive devices shall be non-self-resetting.	<b>IEC 60335-2-3</b>	24	Identical with <b>JIS</b> .	IDT	—	
25 Supply connection and external flexible cords	Types, sectional areas, flexural test, etc. of supply cords 25.7 PVC sheathed cords shall not be used.	<b>IEC 60335-2-3</b>	25	25.7 PVC sheathed cords are allowed as the supply cords for stands of cordless irons.	MOD/alteration	25.7 <b>IEC</b> allows PVC sheathed cords as the supply cords for stands of cordless irons, but <b>JIS</b> does not allow PVC cords for all irons.	25.7 It can not be said for sure that cordless irons are free from such a risk that the supply cord comes in contact with a high temperature part. <b>JIS</b> does not allow use of PVC sheathed cords because there is a problem (heat resistance). Proposal to <b>IEC</b> will be considered.



(I) Requirements in JIS		(II) International Standard number	(III) Requirements in International Standard		(IV) Classification and details of technical deviation between JIS and the International Standard by clause Location of deviation: text Indication method: dotted underlines		(V) Justification for the technical deviation and future measures
Clause	Content		Clause	Content	Classification by clause	Detail of technical deviation	
25 Supply connection and external flexible cords (concluded)	25.14 In flexural endurance test of cords, a load of 2 kg is applied to an appliance exceeding 2 kg in mass only. Appliances not exceeding 2 kg are tested under the specification stated in general requirements (a load of 5 N).			25.14 In flexural endurance test of cords. IEC specifies to apply a load of 2 kg uniformly irrespective of the mass of appliance.		25.14 IEC specifies uniform application of 2 kg load irrespective of the mass of the iron, but JIS decided application of 2 kg load to appliances exceeding 2 kg in mass only [appliances not exceeding 2 kg in mass are tested under the specification stated in general requirements (a load of 5 N)].	25.14 From the view point of actual service conditions, only a load far lower than the mass of the iron (normally 1.2 kg or so) is applied to the supply cord. A load which reflects the actual service conditions shall be applied. It is considered that this severe IEC specification comes from protection against breakage of earth wire in class I appliance (prevention of electric shock). Proposal to IEC will be considered.
26 Terminals for external conductors	As specified in JIS C 9335-1.	IEC 60335-2-3	26	Identical with JIS.	IDT	—	
27 Provision for earthing	As specified in JIS C 9335-1.	IEC 60335-2-3	27	Identical with JIS.	IDT	—	
28 Screws and connections	As specified in JIS C 9335-1.	IEC 60335-2-3	28	Identical with JIS.	IDT	—	

(I) Requirements in <b>JIS</b>		(II) International Standard number	(III) Requirements in International Standard		(IV) Classification and details of technical deviation between <b>JIS</b> and the International Standard by clause Location of deviation: text Indication method: dotted underlines		(V) Justification for the technical deviation and future measures
Clause	Content		Clause	Content	Classification by clause	Detail of technical deviation	
29 Clearances, creepage distances and solid insulation	Clearances, creepage distances and thickness of solid insulation The depth of recess of socket of cordless iron is specified.	<b>IEC 60335-2-3</b>	29	Identical with <b>JIS</b> .	IDT	—	
30 Resistance to heat and fire	Ball-pressure test, glow-wire test and needle-flame test	<b>IEC 60335-2-3</b>	30	Identical with <b>JIS</b> .	IDT	—	
31 Resistance to rusting	As specified in <b>JIS C 9335-1</b> .	<b>IEC 60335-2-3</b>	31	Identical with <b>JIS</b> .	IDT	—	
32 Radiation, toxicity and similar hazards	Not especially specified.	<b>IEC 60335-2-3</b>	32	Identical with <b>JIS</b> .	IDT	—	
Annexes	As specified in <b>JIS C 9335-1</b> .	<b>IEC 60335-2-3</b>	Annexes	Identical with <b>JIS</b> .	IDT	—	

Designated degree of correspondence between **JIS** and International Standard: MOD

Remarks 1 Symbols in sub-columns of classification by clause in the above table indicate as follows:

- IDT: Identical in technical contents.
- MOD/addition: Adds specification item(s) or content(s) not included in International Standard.
- MOD/alteration: Alters the specification content(s) included in International Standard.

2 Symbol in column of designated degree of correspondence between **JIS** and International Standard in the above table indicates as follows:

- MOD: Modifies International Standard.

### Reference standards

The reference standards in **JIS C 9335-1** is applicable except as follows:

Addition:

JIS C 9335-2-44 *Safety of household and similar electrical appliances—Part 2-44 :  
Particular requirements for ironers*

Errata for JIS (English edition) are printed in *Standardization Journal*, published monthly by the Japanese Standards Association, and also provided to subscribers of JIS (English edition) in *Monthly Information*.

Errata will be provided upon request, please contact:

**Standardization Promotion Department, Japanese Standards Association**

4-1-24, Akasaka, Minato-ku, Tokyo, 107-8440 JAPAN

TEL. 03-3583-8002 FAX. 03-3583-0462

100% Recycled paper

PROTECTED BY COPYRIGHT